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BRIEF NOTES ON THE IMMUNITY
OF THE
CAPITAL OF THE STATE OF MEXICO
FROM PALLULSTRAL COMPLAINTS
AND CONSIDERATIONS INFERRED FOR THEIR TREATMENT.



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Imperial and other institutions, maintaining hospitals and all the
other means of relief and good health, substituted in the said
city, which is known to maintain no such hospital,
by such means, as are now in existence, that will guarantee
patients along such means, from all such disease,
that cannot be remedied by the best medical knowledge, so that
all patients, subject to such disease, approach the said hospital
without fear of suffering any trouble, and of receiving
all the best treatment and service according to

BRIEF NOTES ON THE IMMUNITY

OF THE

CAPITAL OF THE STATE OF MEXICO

From Palliastral Complaints,
AND CONSIDERATIONS INFERRED FOR THEIR TREATMENT.

THE Supreme Government of the State, having invited,
at the suggestion of the Mexican Commission, this Board of
Health, to collaborate in the presentation of a work to the
Hygienic Congress, which is to meet in Mexico next November.
In view of the importance of the conclusions to which it
is devoted, we have not hesitated in choosing as a theme of
the said work, the consignation and demonstration of a fact
that deserves, in our opinion, a minute study, and is confirmed
by the statistic data collected in the Office of Civil Records,
and in accord with this memorandum, as is also the testimony
of all the doctors, who exercise their profession in this locality.

This fact is the rarity of marshy soil in this city and the
beneficial influence exercised by its climate and other conditions
on patients, who, attacked by this illness, remove to it
from other places. Taking this fact, in a general manner, into
consideration, as being confirmed, we will study the climatic,
local, conditions, and all those that can influence in this result
this study constituting the work that we have the honor of
presenting in answer to the said invitation.

It is well known that the conditions favorable to the growth of the said pallustral complaints, conditions that are found united in the countries where they reign, are: an impermeable sub-soil and little or no inclination of the ground, which, not permitting the easy absorption of rain water, cause pools of stagnant water. After the rainy season these pools remain full of vegetable residue and all the conditions are found united to facilitate the decomposition of these organic dregs; for, subsequent to the said season, the weather is generally warm.

The miasma resulting from this discomposition is the known universal cause of paludous fevers.

The data inserted in continuation show clearly that these conditions are realized in the locality to which we refer, whence is deduced its immunity.

The city of Toluca, the capital of the State of Mexico, situated at $19^{\circ} 17' 30'' 4'''$ North latitude and $1^{\circ} 59' 97'''$ West longitude, meridian of Mexico, it is in the interior of the valley of the same name, in a dale watered by a small river, which crosses the town from South West to North East, and formed on the South by the volcanos called «Nevado de Toluca,» which is now extinguished, and on the West and North by the mountains of Coatepec, Teresona, Toloche, Carmen and Huitzila. The plain on which the town is founded is one of the highest elevation in the Republic for it is 2,625 metres above the level of the sea, and 417 metres above the city of Mexico, and has a general inclination from South West to North East of 0m.01. of declivity. The country round it can be divided into two parts; the North part extending to the principal square, commences at the trachytic rocks of the mountains, on which rocks is found a layer of fluvial tophus and another thin one of sandy soil. The land on the South East and West are alluvial ones such as pomey tophus, great alluvions, strata of sand and in some zones beds of gravel. The auriferous strata or layers are of little depth on the West, and deep on the North and East of the city. This geological formation of the country, united to its inclination, makes it easy for the

fluvial waters to flow with ease and rapidity through the bed river that serves as a drain, and leaves the town dry very quickly after the rain:

The climatic data of the city are as follows:

The average temperature in the year is $12^{\circ}91$ centigrades.

The average temperature of each season is:

In the Spring	$12^{\circ}50.$
In Summer	$14^{\circ}56.$
In Autumn	$14^{\circ}40.$
In Winter	$10^{\circ}18$ centgr.

The relative average humidity is 70,43 and in each of the seasons as follows:

Spring	60,70.
Summer	65,30.
Autumn	77,12.
Winter	75,23.

The dominating wind is from the South East and its average velocity is 1 metre 24 centimetres per second.

The maximum barometric pressure is 558m.m 90, the minimum 554m.m 31, and it is noticed that it takes place respectively in October and November and in March and April.

The maximum quantity of ozone is $7^{\circ}00$, the minimum $1^{\circ}00$, and it is impossible to fix absolutely the time it takes place as it is subject to a multitude of variations.

The velocity of the water in the rainy season is 0m. 67 per second.

In the dry season the velocity diminishes more or less according to the absorption and class of land over which the water flows:

Its population of 20,000 inhabitants is composed principally of individuals of medium vigour, of lymphatic nervous temperament, dedicated in general to agricultural pursuits and mechanical arts, most of them of the poorer classes. All these circumstances explain the presence of the dominating diseases, which are: catahral affections, congestions, pulmonary emphysema, typhus, typhoid fever and cancer.

The study of all these geological, topographical, and climatic conditions which surround the capital of the State of Mexico and which we have already enumerated, and their comparison with the conditions favorable to the growth of pallidic affections, easily lead us to establish several conclusions.

1st. The city of Toluca is not propitious, and we can even say, almost exempt from paloudous fevers, seeing that its soil is of sufficient inclination to allow the fluvial waters to pass with ease, thus preventing the formation of marshes.

2nd. It being the principal object in the treatment of any illness to suppress as much as possible, the cause which favours or determines, it is obvious to say that, pallustral diseases not existing in Toluca, and its atmosphere being besides, well purified, the cure of these diseases is wonderfully facilitated in this locality.

3rd. From the above conclusion is inferred that the said town unites the greater number of circumstances desired to constitute a sanitary station, where patients could go for a quick and easy cure.

These conclusions, deduced theoretically, as we have already said, from the conditions of the place, are fully corroborated by practise, according to the statistic data that follow.

STATISTIC Table of mortality from diseases of pallus-tric origin, compared with general mortality.

YEARS.	General mortality.	MORTALITY FROM PALLUDOUS DISEASES.	
1881	1,694	0	Mortality per 1,000
1882	1,822	1	during 10 years
1883	1,565	2	by paloudous di-
1884	1,796	5	seases.....2.30
1885	1,736	5	
1886	2,317	4	
1887	2,156	4	
1888	1,826	11	
1889	2,269	6	
1890	2,116	8	
1891	1,603	4	
1892	1,624	1	
TOTALS....	22,524	51	2.30

In order to calculate properly the above data, we think it necessary to make a few explanations: This data refers not only to the capital, but to the whole municipality; and notwithstanding this, cases of paloudous fever are very rare compared with the general mortality. It must be added also that except in the capital, in almost every town patients are without medical assistance; and certificates of death are given in the locality, classifying the disease that occasions death according to the knowledge of the patients relatives; and it can be easily seen that this data is not as exact as it might be, coming from persons entirely uneducated in medical knowledge. Lastly, the municipal towns are inhabited by a multitude of muleteers, who in their journeys to the hot lands and to places full of the diseases of which we are writing, can become affected by them in these places. Their poverty and the nature of their occupation do not permit them to suspend

their journeys to submit to a formal cure, with the result that on account of the roughness of their life and their bad un-nutritious food, they soon contract pallustral cachexy which causes their death.

Appreciating the above statistic data after the enumerated considerations, it is clear, as we have already said and as we repeat, that the exactitude of the numeral data corroborates our assertion. In conclusion we will say that the statistic data refers solely to a period of ten years, because since that time they have been authorized by an expedition of the faculty of death certificates.

We think we have concluded this imperfect work, only wishing that it may be of some use to patients and to our professional colleagues.

Toluca, 19th. October, 1892.

JUAN N. CAMPOS.

ENRIQUE IGLESIAS,

(Secretary.)